

Issues Matrix: Low Impact Development-Related Proposed Changes to the RZC (Version 6/14/2016)

Issue/ Question	Discussion Notes	Status
<p>1. When is LID considered infeasible? (Biethan)</p>	<p><u>Planning Commission Discussion</u> (5/25) Commissioners sought more information regarding the feasibility of Low Impact Development (LID) at development sites. They asked for specific examples of the infeasibility criteria.</p> <p><u>Staff Response/Recommendations</u> (5/31) The Department of Ecology's <i>Stormwater Management Manual for Western Washington</i> (SWMMWW) provides infeasibility criteria for the infiltration of stormwater and also provides separate infeasibility criteria for bioretention (rain gardens) and pervious pavement. These criteria are based on technical considerations; economic considerations cannot be used as justification for infeasibility. According to the SWMMWW, if soils at a development project site do not soak up water at a rate of 0.3 inches per hour or greater, the site is considered infeasible for infiltration. Additional criteria then also may apply, for example:</p> <ul style="list-style-type: none"> • Sites with contaminated soils are infeasible for infiltration. • Sites with close proximity to steep slope or landslide hazard areas are infeasible for infiltration. • Dispersing runoff and allowing it to drain in septic fields is not considered feasible. • Pervious pavements are infeasible for roads that are not "low traffic volume" (i.e., less than 400 vehicle trips per day). • Bioretention (e.g. rain gardens) is considered infeasible within a quarter mile of lakes and other areas where phosphorus control is an issue. <p>City Development Review engineers review materials submitted by development project proponents and determine if the submittals provide a justification for infeasibility. Because LID includes actions such as tree retention, site planning, and native soil protection, some amount of planning for LID is appropriate at most development sites.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>
<p>2. What will be the fiscal impact to the City of implementing the new LID requirements in the <i>Western Washington Phase II Municipal</i></p>	<p><u>Planning Commission Discussion</u> (5/25) Commissioners sought more information regarding the additional costs to City associated with meeting the NPDES LID-related requirements.</p> <p><u>Staff Response/Recommendations</u> (5/31) Incorporating LID into the City's daily operations will require additional time, energy, and equipment. LID uses a greater degree of pre-construction analysis and numerous, small, dispersed stormwater facilities at individual</p>	<p>Closed (6/8)</p>

<p><i>Stormwater</i> (NPDES) Permit? (Miller)</p>	<p>development sites. As a result, additional staff time will be needed to: review project development submittals, inspect facilities during construction, monitor facilities after construction, and maintain facilities so that they properly function. These considerations have been included within the Stormwater Utility and the Development Services 2017 – 2018 budget offers. Project costs for City capital improvement projects (CIP) also have been updated to reflect low impact development where needed.</p> <p><u>Public Comment</u></p>	
<p>3. Do master plans vest to today's stormwater regulations? Will they be exempt from LID requirements at time of development? (Biethan)</p>	<p><u>Planning Commission Discussion</u> (5/25) Commissioners sought more information regarding the vesting for development projects that have undergone a Master Planning process. In particular, are the individual projects within the area encompassed by the master plan vested to the standards at the time the master plan agreement has been activated?</p> <p><u>Staff Response/Recommendations</u> (5/31) Master Planning processes often result in a negotiated development agreement. Development agreements typically created vested rights for all future projects within the Master Plan area to the development standards at the time the agreement is activated. In some cases, the City has negotiated development agreements to include specific requirements for the use of LID.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>
<p>4. What would a 5% set aside look like on a development site? (MacNichols)</p>	<p><u>Planning Commission Discussion</u> (5/25) Commissioners sought more information regarding what the <i>Small Storm Infiltration Set Aside</i> requirement would look like: a) in terms of the technologies used, and b) in terms of location on a site.</p> <p><u>Staff Response/Recommendations</u> (5/31) Staff has conducted table top exercises that help illustrate what the LID infiltration facility requirement might look like at various sites. This information is supplied during the June 8, 2016 study session.</p> <p><u>Public Comment</u> (4/25) During a public workshop, members of development community asked if the set aside is a requirement or a suggestion.</p>	<p>Closed (6/8)</p>

<p>5. Do proposed LID regulations allow for innovative approaches? (Miller)</p>	<p><u>Planning Commission Discussion</u> (5/25) The Commissioners sought more information on how prescriptive or descriptive the NPDES permit LID requirements are.</p> <p><u>Staff Response/Recommendations</u> (5/31) The LID-related permit regulations are written as a response to a 2008 ruling from the <i>Washington State Pollution Control Hearing Board</i>. As such, the requirements are quite specific in their intent to make low impact development the preferred and common method for managing stormwater. The Washington State Department of Ecology provides guidance and training which further defines the boundaries that jurisdictions must operate within to meet NPDES LID-related permit requirements. The 5% set-aside is an example of an innovative approach to working within these boundaries to meet the intent of the permit and provide greater clarity and predictability to developers.</p> <p>The NPDES permit requires design engineers to use specific LID methodologies, design assumptions, and criteria. The permit also requires development projects to use specific LID facilities at development project sites, or design stormwater facilities that will manage stormwater to a specified standard. This performance standard offers the design engineers a less prescriptive means by which to meet the permit’s LID regulations, and allows innovative approaches as approved by the city plan review process.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>
<p>6. Is there a plan to evaluate how the performance of 5% set-aside is working against a trend that may be showing a systematic trend to reduce the set aside to 3%, for example? (Miller)</p>	<p><u>Planning Commission Discussion</u> (5/25) The Commissioners express interest in seeing the set aside requirement adaptively managed to determine if the set aside requirement can be reduced.</p> <p><u>Staff Response/Recommendations</u> (5/31) The set aside requirement of 5% is based on a conservative hydrologic modeling exercise—i.e. modeling with soils that have moderate to poor infiltration capacities. The proposed set aside requirement language allows for a reduction in the set aside if modeling (i.e., soil conditions) supports this reduction. The City has an interest creating fair and justifiable, yet conservative sizing for this set aside in order to: (a) ensure compliance with the NPDES permit, (b) protect public safety and property, and 3) provide predictability for developers. The City is currently reviewing a proposal to better map soils within Redmond. Geotechnical reports from development projects would be part of this soil mapping process. As more information becomes available about the Redmond’s soils, the City may be able to provide more specific information regarding the infiltration rates for specific areas in the City; this depends on the distribution and level of heterogeneity of soils within a given area of the city.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>

<p>7. Is it correct to say that surface water issues can be separated into two categories: water quality issues and water quantity issues? (Miller)</p>	<p><u>Planning Commission Discussion</u> (4/27) Commissioners discussed the nature of stormwater issues, and the need to clean stormwater runoff and address issues related to volume of runoff generated.</p> <p><u>Staff Response/Recommendations</u> (5/13) This is a correct characterization. In general, urbanization results in faster runoff (water quantity) and more polluted runoff (water quality) from impervious surfaces such as roads and parking lots.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>
<p>8. How do the City's proposed amendments compare to what is proposed for in neighboring jurisdictions? (Biethan)</p>	<p><u>Planning Commission Discussion</u> (5/25) The Commissioners would like information regarding how Redmond's attempts to meet the NPDES LID requirements compare to Kirkland, Bellevue, Bothell, and Sammamish. The Commissioners asked if this information could be supplied in a manner similar to comparisons made on other topics that have been brought before them.</p> <p><u>Staff Response/Recommendations</u> (5/31) Staff asked a land use planning consultant, SvR, to rate Redmond's LID-integration process relative to other jurisdictions with which they work. Based on a scale from 1 (low) to 5 (high), the consultant felt that for staff engagement and communication in Redmond rated a "5," and adoption of LID practices and regulatory rigor, Redmond is about "3," --"on the high side of average."</p> <p>More detailed comparisons need to consider differences among jurisdictions:</p> <ul style="list-style-type: none"> • Some jurisdictions use the <i>King County Stormwater Manual</i> rather than the SWMMWW; as a result they will address NPDES LID requirements differently. • Some jurisdictions have different development review processes and hence may address topics in a manner that makes direct comparisons difficult. • Some jurisdictions have different physical landscapes. <p>A meeting is scheduled on June 8th with NPDES coordinators from neighboring jurisdictions. The goal of this meeting is to discuss specific actions jurisdictions are taking to meet the LID integration requirement, and use this information to summarize differences and similarities.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>

<p>9. Given Redmond's high water table, how do we use impervious pavement and protect our aquifer from auto-related contaminants? (Miller)</p>	<p><u>Planning Commission Discussion</u> (4/27) Commissioners discussed and sought information regarding Redmond's relatively shallow groundwater and the use of the aquifer for drinking water and treatment of polluted stormwater runoff. They were particularly interested in how the City might be able to treat runoff from roads.</p> <p><u>Staff Response/Recommendations</u> (5/13) The Washington State Department of Ecology has not certified pervious pavement as a treatment for polluted stormwater runoff. Further, Department of Ecology's guidance also specifies that pervious pavement roads should only be used in areas with low traffic volumes due to the wear and tear considerations. Currently, pervious pavement is not allowed in areas where the ground water table is high (Wellhead Protection Zones). Given these factors, staff recommends allowing the use of pervious pavement from pollution generating surfaces in locations, such as residential, where there is sufficient distance to groundwater and where streets meet the low traffic criterion.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>
<p>10. What land uses (zoning designations) do the NPDES LID integration requirement impact? (Miller)</p>	<p><u>Planning Commission Discussion</u> (4/27) Commissioners wanted to know what land use designations are subject to the pending NPDES LID requirements.</p> <p><u>Staff Response/Recommendations</u> (5/13) This requirement applies to all zoning designations. Because there are multiple, overlapping NPDES LID permit requirements – and due to other state-mandated stormwater requirements – LID activities will be required to some degree in all parts of Redmond unless it is determined infeasible as per criteria in the SWMMWW.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>

<p>11. If different stormwater management actions had been taken in Overlake in previous years, how would this have affected our management decisions now? (Miller)</p>	<p><u>Planning Commission</u> (4/27) Commissioners discussed changes in stormwater management standards, and the fact that older standards were less protective of natural waterways in the past. The question arose: to what degree do the current stormwater management activities address past management decisions?</p> <p><u>Staff Response/Recommendation</u> (5/13) The characterization that current stormwater management practices attempt to address past and present management decisions is valid. There is currently no requirement to retrofit development constructed using an older standard.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>
<p>12. Does site design in LID integration include building design? (Biethan)</p>	<p><u>Planning Commission</u> (4/27) Commissioners sought information on how LID might affect building design.</p> <p><u>Staff Response/Recommendation</u> (5/13) The proposed changes to the RZC do not directly address above-ground building design. In some cases, a developer may choose to meet LID requirements by incorporating features into the building design, such as by limiting the building footprint to reduce runoff, or installing a green roof. To meet NPDES requirements, developers will need to ensure they have set aside room for the placement of LID infiltration facilities on their sites. As part of the proposed changes, developers will be required to ensure that subsurface structures, such as parking lots, do not impede stormwater infiltration into the ground. These considerations may indirectly influence building design.</p> <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>

<p>13. How much will this cost developers? What is the nature of these costs? (Biethan)</p>	<p><u>Planning Commission</u> (4/27) Commissioners discussed the cost of the NPDES LID requirements to development projects. They asked if there are valid case studies. They also requested some examples detailing the character or nature of these costs.</p> <p><u>Staff Response/Recommendation</u> (5/13) This is difficult to answer because of the numerous variables involved, and because the variable change from site to site. Pacific Northwest case studies on this topic are not plentiful. Some generalizations can be made:</p> <ul style="list-style-type: none"> • There are cases in Western Washington where development projects have voluntarily chosen to use a LID approach because it was less expensive relative to traditional stormwater management techniques (pipes, vaults, ponds). • The cost of upfront on-site analysis and planning will increase. • In some cases, in areas where soils readily soak up stormwater, the added expense of analysis may be off-set by savings resulting from a reduction in the size of traditional detention facilities—i.e. smaller stormwater ponds and vaults. • In areas where soil infiltrates poorly, the use of LID within the overall stormwater management strategy could increase costs. • The State provides an “infeasibility criteria” for green stormwater infrastructure. If stormwater does not soak into the ground at a specified rate, the site is exempt from the NPDES on-site LID infiltration requirement. • In the Overlake Neighborhood, LID will allow reductions in the size of regional facilities. This will save on the order of tens of millions of dollars. <ul style="list-style-type: none"> --Without LID, City would need between 6 – 8 acres of land for regional detention facilities --With a “moderate level” of LID the City needs about 4 acres for regional detention facilities --Savings due to cost of land, construction --Reducing the size of regional facilities created additional saving in maintenance --The savings generated by a reduction in the size of regional facilities will be passed on to the development projects and Overlake stormwater utility rate payers <p><u>Public Comment</u></p>	<p>Closed (6/8)</p>
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<p>14. Please review the Technical Committee RZC changes to ensure that they allow the appropriate use of pervious pavement and also provide support for future advances in pervious pavement technology. (Miller)</p>	<p><u>Planning Commission</u></p> <p>(6/8) Commissioner Miller asked staff to review the Technical Committees recommendations to ensure that the language does not discourage or preclude the appropriate use of pervious pavements. He also mentioned that technologies and methodologies associated with pervious pavement are rapidly changing, and would like staff to review the Technical Committee Recommendations to ensure proposed language changes have the necessary flexibility to respond to these advancements. The Commissioners acknowledged that this topic crosses over to a discussion of infiltration from pollution generating surfaces in wellhead protection areas.</p> <p><u>Staff Response/Recommendation</u></p> <p>(6/24) Staff appreciates this comment. In response, the staff conducted a review of the Technical Committee Recommendation. Staff did not find any references in the Technical Committee Recommendation that prohibit or discourage the use of any specific type of LID facility.</p> <p>This result reflects the different roles that the RZC and Stormwater Technical Notebook (STN) play in Redmond’s overall regulatory landscape. The RZC addresses land use issues, regulating the size of developments and the type of activities allowed within various zones of the City. The Stormwater Technical Notebook provides technical information regarding the type of stormwater infrastructure facilities required within Redmond, and how these facilities must be designed. The RZC and the STN must support and align with one another to avoid conflicts and confusion. The intent of the Technical Committee recommendation is to ensure that the RZC can fully support—and does not conflict—with the City’s adoption of NPDES requirements that must be incorporated into STN.</p> <p>During the LID integration policy review discussions, staff considered low impact development as a desired stormwater management performance outcome, as opposed to merely just placing green stormwater infrastructure facilities. In order to ensure that the City has the tools and information necessary to better protect natural waterways, Redmond has been evaluating a number of LID technologies—including pervious pavement. Other groups within the region are conducting similar investigations. As the design, implementation, and maintenance of various LID facilities improve, the City’s STN will be updated to reflect these advancements. Staff believes the proposed RZC changes are broad enough to support the majority of anticipated, future LID-related advancements to the STN and that as a result, it achieves the intent of supporting the desired outcomes and providing for advancement in techniques over time.</p> <p><u>Public Comment</u></p>	<p>Open</p>
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